

What is claimed is:

1. An antiparallel oligonucleotide triplex, the improvement comprising the substitution of at least one purine in said triplex with at least one 8-aminopurine.
2. An oligonucleotide hairpin comprising a first oligonucleotide strand, a linker, and a second oligonucleotide strand, wherein:
  - (a) said first oligonucleotide strand is substantially a purine strand comprising at least one 8-aminopurine; and
  - (b) said linker is connected to either the 3' end of said first oligonucleotide strand and the 5' end of said second oligonucleotide strand or to the 5' end of said first oligonucleotide strand and the 3' end of said second oligonucleotide strand.
3. The oligonucleotide of claim 2, wherein said 8-aminopurine is selected from the group consisting of 8-aminoadenine, 8-aminoguanine, and 8-aminohypoxanthine.
4. The oligonucleotide of claim 2, wherein said linker is tetrathymine.
5. The oligonucleotide of claim 2, wherein said second oligonucleotide strand comprises guanine and adenine.
6. The oligonucleotide of claim 2, wherein said second oligonucleotide strand comprises guanine and thymine.
7. The oligonucleotide of claim 2, wherein said first oligonucleotide strand is substantially complementary to a target oligonucleotide.
8. An oligonucleotide duplex comprising a first oligonucleotide strand and a second oligonucleotide strand, wherein:

(a) said first oligonucleotide strand is substantially a purine strand comprising at least one 8-aminopurine; and

(b) said second oligonucleotide strand is substantially complementary to and chemically bound to said first oligonucleotide strand.

9. A method for stabilizing an antiparallel oligonucleotide triplex, comprising the steps of

(a) providing an antiparallel oligonucleotide triplex comprising a first, second, and third oligonucleotide strand, wherein at least one oligonucleotide strand comprises a purine; and

(b) replacing said purine with an 8-aminopurine.

10. An antiparallel triplex, comprising:

(a) a first oligonucleotide strand comprising at least one 8-aminopurine;

(b) a linker connected to said first strand;

(c) a second oligonucleotide strand connected to the opposite end of said linker from the first oligonucleotide strand and capable of forming a hairpin with said first oligonucleotide strand; and

(d) a third oligonucleotide strand comprising pyrimidines, wherein said third oligonucleotide strand is substantially complementary to and antiparallel to said first oligonucleotide strand.

11. The triplex of claim 10, wherein said second oligonucleotide is bound to said first oligonucleotide in one of a Hoogsteen configuration or a reverse Hoogsteen configuration.

12. A method for targeting single-stranded DNA or RNA of a sample, in vivo or in vitro, comprising introducing an oligonucleotide hairpin having at least one 8-aminopurine substitution to a sample solution, said sample solution optionally comprising a target single-stranded DNA or RNA, said oligonucleotide hairpin capable of forming an antiparallel triplex with said single-stranded DNA or RNA.

13. The method of claim 12, including wherein said sample solution has a neutral, basic, or acidic pH.